

Treatment with light benefits Alzheimer's patients, study finds

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Exposure to light appears to have therapeutic effects on Alzheimer's disease patients, a Wayne State University researcher has found.

In a study published recently in the *Western Journal of Nursing Research*, LuAnn Nowak Etcher, Ph.D., assistant professor of nursing, reported that patients treated with blue-green light were perceived by their caregivers as having improved global functioning.

Caregivers said patients receiving the treatment seemed more awake and alert, were more verbally competent and showed improved recognition, recollection and [motor coordination](#). They also said patients seemed to recapture their personalities and were more engaged with their environment. Patients' moods also were described as improved.

Etcher's work is inspired by her interest in a phenomenon known as "sundowning," when Alzheimer's patients sleep during the day, wake up later and may be up all night long. Part of her doctoral research was to utilize light, a common intervention for circadian disorders, to regulate the rest-activity patterns of women with Alzheimer's.

This study, Etcher said, was an effort to address disagreement among researchers on the effect of therapeutic light in regulating rest-activity patterns in Alzheimer's patients. The study involved 20 women older than age 65 with Alzheimer's dementia from nursing homes in southeast Michigan. Each patient was assigned randomly to an experimental group receiving blue-green light treatments or a control group receiving dim

red light.

A commercially available visor used to treat [seasonal affective disorder](#) and [jet lag](#) was used to administer the light to patients. Caregivers — patients' family members and nursing facility personnel — were not told which type of light was hypothesized to have physiologic effects.

Although blue-green light recipients comprised the active experimental group, Etcher said she was surprised when some recipients of red light — the placebo group — also were reported as showing improvements, with caregivers saying their [patients](#) were calmer and had reduced resistance to care.

The level of effects varied, Etcher said, noting that while the blue-green group recipients were largely reported by caregivers as showing improvement, a few showed little to no effect from the treatments.

"Some of the rest-activity pattern disruptions that we see associated with Alzheimer's dementia may not necessarily be circadian based," Etcher said. "They may be due to unmet needs, pain or other phenomena, and therefore would not respond to an intervention aimed at regulation of the circadian system."

Calling her study preliminary, she said it now needs to be replicated with a larger sample and different demographics.

In addition to ascertaining which behaviors are circadian based, establishing which methods are most appropriate to analyze data like Etcher's requires exploration, she said. She is proposing further work that uses two different nonlinear analytic methods to examine sensitivity and specificity to detect change in circadian patterns, with a long-term goal of developing interventions to regulate those patterns to the benefit of patients' overall function.

"If they sleep better at night, and are more awake during the day, they can eat, they can interact with other people and they can take advantage of other cueing agents in the environment," she said. "In addition to [light](#) during daytime and darkness during the nighttime, smells at mealtimes, food intake, interactions — all these things in conjunction help regulate our day."

Provided by Wayne State University

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